Listing of the Claims:

1-14. cancelled

15. (previously presented) An image processing unit for computing a sequence of output images on basis of a sequence of input images, comprising:

 - a motion estimation unit for computing a motion vector field on basis of the input images, the motion vector field comprising motion vectors, wherein each of the motion vectors belongs to a group of pixels;

 - a quality measurement unit for computing a value of a quality measure for the motion vector field;

 - an interpolation unit for computing a first one of the output images by means of interpolation of pixel values of the input images, the interpolation being based on the motion vector field; and

 - control means to control the interpolation unit on basis of the quality measure, characterized in that the quality measurement unit is arranged to compute the value of the quality measure on basis of the maximum of the differences between the motion vector

 wherein the motion estimation unit, the quality measurement unit, the interpolation unit, and the control means are implemented using a processor.

16. (previously presented) An image processing unit as claimed in claim 15, wherein the group of pixels of one of the motion vectors is a neighboring group of pixels of the groups of pixels of the rest of the motion vectors.

17-18. cancelled

19. (previously presented) An image processing unit as claimed in claim 15, characterized in that the interpolation unit comprises a motion compensated interpolator to perform the motion compensated interpolation of the pixel values of the input images

on the basis of the motion vector field, a non-motion compensated interpolator to perform the alternative interpolation of the pixel values of the input images, and a switch coupled to the motion compensated interpolator and the non-motion compensated interpolator, wherein the switch is controlled by the control means.

20. (previously presented) An image processing unit as claimed in claim 15, characterized in that the interpolation unit mixes intermediate images from the motion compensated interpolation and from the alternative interpolation.

21. (previously presented) An image processing unit as claimed in claim 20, characterized in that the interpolation unit comprises a motion compensated interpolator to perform the motion compensated interpolation of the pixel values of the input images on the basis of the motion vector field, a non-motion compensated interpolator to perform the alternative interpolation of the pixel values of the input images, two multipliers that are controlled by the control means, and an adding unit.